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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,758	01/22/2004	Ik-Soo Lee	21C-0018-P	7540

23413 7590 12/26/2006
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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/26/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/763,758

Applicant(s)

LEE ET AL.

Examiner

Thoi V. Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,8,10,13,14 and 16-20 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,10 and 13 ~~is/are~~ allowed.
- 6) ☒ Claim(s) 8,14,16,17 and 20 ~~is/are~~ rejected.
- 7) ☒ Claim(s) 18 ~~is/are~~ objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/244,292.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/26/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 31, 2006 has been entered.

Accordingly, claims 8 and 14 were amended, and claims 2, 3, 5-7, 9, 11, 12 and 15 were cancelled. Currently, claims 1, 4, 8, 10, 13, 14 and 16-20 are pending in this application; of these claims, claims 16-20 were withdrawn and claims 1, 4, 8, 10, 13 and 14 are considered in this office action. However, claims 16-20 are also considered due to the participation and/or obviousness over the following cited prior arts.

Response to Arguments

2. Applicant's arguments with respect to claims 8 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 8, 14, 16, 17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasagawa et al. (Sasagawa, US 6,636,283 B2).

Re claims 8 and 14, as shown in Figs. 1-3 and 10, Sasagawa discloses a liquid crystal display device comprising:

- a lamp assembly 3 to generate light in a linear direction (Fig. 1),
- a display panel assembly 30 to display images using image data externally provided (inherently) and light provided in a planar direction (Fig. 2), and
- a light guiding plate 1 comprising:
 - a light incident portion (left side of the light guiding plate 1 in Fig. 2) into which the light is incident from the lamp assembly 3;
 - a light reflecting portion 1b comprising a light reflecting pattern formed to reflect the light provided from the light incident portion; and
 - a light transmitting surface 1a to transmit the light reflected by the light reflecting pattern to the display panel assembly 30,

wherein the light reflecting pattern includes a plurality of light reflecting protrusions (prism-shaped protrusions), each of the light reflecting protrusion comprising:

a first light reflecting plane 21 (reflective surface) that is inclined with respect to the light transmitting surface 1a to face toward the light source 3; and

a second light reflecting plane 22 (inclined surface) that is inclined with respect to the light transmitting surface 1a and connected with an edge of the first light reflecting plane 21 so that the light reflection protrusions each form a prism shape, the light reflecting protrusions respectively having the second light reflecting planes 14 that are configured to have different areal sizes to control reflectivity of the respective light reflecting protrusions (col. 14, lines 11-25),

wherein, as shown in Fig. 10, the areal sizes of the light reflecting protrusions are gradually increased by a selected amount such that the areal sizes of the first reflecting planes 21 and the second light reflecting plane 22 are larger as the light reflecting section is remoter from the light incident portion (col. 16, lines 7-20); and

wherein the first light reflecting planes 21 of the light reflecting protrusions respectively have first angles with respect to the light transmitting surface 1a, the second light reflecting planes 22 of the light reflecting protrusions respectively have second angles with respect to the light transmitting surface 1a, and the light reflecting protrusions each have different heights, wherein the first angles have a substantially identical value, the second angles have a substantially identical value, and the heights from the light transmitting surface 1a to a tip of the light reflecting protrusions are

Art Unit: 2871

gradually increased by a selected amount such that the height of a light reflecting protrusion is larger as the light reflecting protrusion is remoter from the light incident portion as shown in Fig. 10 (col. 14, lines 19-24 and col. 16, lines 7-20).

Re claim 16, as shown in Figs. 1-3, 10 and 11, Sasagawa discloses a method for displaying images in a liquid crystal display device, comprising:

generating light in a linear direction (Fig. 2);

transforming the light in a linear direction into light in a planar direction, the transforming step including (col. 13, line 65 through col. 14, line 29 and col. 16, lines 11-67):

providing light reflecting sections 21, 22 (prism-shaped protrusions) each having a different reflectivity; and

reflecting the light in a linear direction at the light reflecting sections to obtain the light in a planar direction, a light reflecting section having higher reflectivity as the light reflecting section is remoter from a light source generating the light in a linear direction; and

displaying images using the light in a planar direction and image data externally provided.

Re claim 17, as shown in Fig. 10, Sasagawa discloses that the reflecting step includes varying the reflectivity of the respective light reflecting sections by changing areal sizes of the light reflecting sections 21, 22 such that the area size of a light reflection section is larger as the light reflection section is remoter from the light source (col. 16, lines 10-23),

wherein, re claim 20, the light reflecting sections 21, 22 each have a prism shape with first and second light reflecting planes 21 and 22 and a bottom plane 1a, the varying the reflectivity of the respective light reflecting sections including (col. 16, lines 11-23):

maintaining angles between the first and second light reflecting planes 21 and 22 and the bottom plane 1a substantially constant in all the light reflecting sections; and

increasing a height of the respective light reflecting sections such that the height of a light reflecting section is larger as the light reflecting section is remoter from the light source.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasagawa et al. (Sasagawa, US 6,636,283 B2) in view of Ishihara et al. (Ishihara, US 2001/0019379 A1).

As shown in Fig. 3, Sasagawa discloses a method for displaying images in a liquid crystal display device comprising maintaining a second angle between the second light reflecting plane 22 and the bottom plane 1a substantially constant in all the light

Art Unit: 2871

reflecting sections (col. 14, lines 19-24). However, Sasagawa does not disclose increasing a first angle between the first light reflecting plane 21 and the bottom plane 1a such that the first angle of a light reflecting section is larger as the light reflecting section is remoter from the light source.

As shown in Fig. 16, Ishihara discloses a light guiding plate comprising a plurality of light reflecting sections 25 (projections) each of which defined by a first light reflecting plane 25b and a second light reflecting plane 25a, wherein the first angles "theta" of the first light reflecting planes 25b are gradually increased by a selected amount such that the first angle of a first reflecting plane is larger as the first light reflecting plane is remoter from the light source 3 (paragraphs 11 and 66).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for displaying images in a liquid crystal display device of Sasagawa with the teaching of Ishihara by increasing a first angle between the first light reflecting plane and the bottom plane such that the first angle of a light reflecting section is larger as the light reflecting section is remoter from the light source in order to obtain a uniform illumination for the display from the light source (paragraph 10).

Allowable Subject Matter

7. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See below reasons for allowance of claims 1 and 10.

8. Claims 1, 4, 10 and 13 are allowed.

Re claims 1 and 10, the following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically, none of the prior art of record discloses, in combination with other limitations as claimed, a light guide plate comprising the first light reflecting planes of the light reflecting sections respectively having first angles with respect to the light transmitting surface, and the second light reflecting planes of the light reflecting sections respectively having second angles with respect to the light transmitting surface, the first angles having a substantially identical value and the second angles being gradually decreased by a selected amount such that the second angle of a second light reflecting plane is smaller as the second light reflecting plane is remoter from the light incident portion.

The most relevant reference, US 6,323,919 B1 to Yang et al. (Yang), fails to disclose or suggest the first angles having a substantially identical value. As shown in Fig. 2, Yang discloses a light guide plate 12 comprising the first light reflecting planes 15 of the light reflecting sections having first angles "gamma" with respect to the light transmitting surface 13 and the second light reflecting planes 14 of the light reflecting sections having second angles "alpha" with respect to the light transmitting surface 13, wherein the second angles are gradually decreased by a selected amount such that the second angle of a second light reflecting plane is smaller as the second light reflecting plane is remoter from the light incident portion (or the light source) (col. 4, lines 64-67).

Art Unit: 2871

However, the first angles also gradually decrease as remoter from the light source (col. 5, lines 16-20).

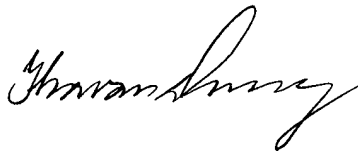
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong



12/14/2006